CLAIMS:

1. An apparatus for performing spatial scalable compression of video information captured in a plurality of frames including an encoder for encoding and outputting the captured video frames into a compressed data stream, comprising:

- a base layer (201) comprising an encoded bitstream having a relatively low resolution;
- a high resolution enhancement layer (203) comprising a residual signal having a relatively high resolution; and
- wherein a dead zone operation unit (214) attenuates the residual signal, the residual signal being the difference between the original frames and the upscaled frames from the base layer.

2. The apparatus for performing spatial scalable compression of video information according to claim 1, wherein the dead zone operation unit attenuates the residual signal by clipping pixel values below a first threshold value to zero.

3. The apparatus for performing spatial scalable compression of video information according to claim 1, wherein the dead zone operation unit attenuates the residual signal by clipping pixel values below a first threshold value to zero and subtracting the first threshold value from all other pixel values.

4. The apparatus for performing spatial scalable compression of video information according to claim 1, wherein the dead zone operation unit attenuates the residual signal by clipping pixel values below a first threshold value to zero and subtracting a second threshold value from all other pixel values.

5. The apparatus for performing spatial scalable compression of video information according to claim 1, wherein the dead zone operation unit attenuates the residual signal by clipping pixel values below a first threshold value to zero and subtracting

the first threshold value from pixel values between the first threshold value and a second threshold value.

6. The apparatus for performing spatial scalable compression of video information according to claim 1, wherein the dead zone operation unit attenuates the residual signal by using a lookup table to produce an output value for each input value.

7. The apparatus for performing spatial scalable compression of video information according to claim 1, further comprising:

- a picture analyzer (304) which receives upscale and/or original frames and calculates a gain value of the content of each pixel in each received frame, wherein the multiplier uses the gain value to attenuate the residual signal prior to being inputted into the dead zone operation unit.

8. The apparatus for performing spatial scalable compression of video information according to claim 7, wherein the gain value goes toward zero for areas of little detail.

9. The apparatus for performing spatial scalable compression of video information according to claim 7, wherein the gain value goes toward one for edges and text areas.

10. The apparatus for performing spatial scalable compression of video information according to claim 7, wherein the gain value is calculated for a group of pixels.

11. The apparatus for performing spatial scalable compression of video information according to claim 1, further comprising:

- a remove clusters operation unit (402) for removing residual pixels belonging to a pixel cluster for clusters below a predetermined size from the residual output..

12. The apparatus for performing spatial scalable compression of video information according to claim 11, wherein the size is the perimeter value of each cluster.

13. The apparatus for performing spatial scalable compression of video information according to claim11, wherein the size is the number of non-zero pixels in each cluster.

14. A layered encoder for encoding and decoding a video stream, comprising:

- a downsampling unit (206) for reducing the resolution of the video stream;
- a base encoder (208) for encoding a lower resolution base stream;
- an upconverting unit (210) for decoding and increasing the resolution of the base stream to produce a reconstructed video stream;
- a subtractor unit (212) for subtracting the reconstructed video stream from the original video stream to produce a residual signal;
- a dead zone operation unit (214) which attenuates the residual signal;
- an enhancement encoder (216) for encoding the resulting residual signal from the dead zone operation unit and outputting an enhancement stream.

15. The layered encoder according to claim 14, further comprising:

- a picture analyzer (304) which receives the video stream and the reconstructed video stream and calculates the gain values of the content of each pixel in each frame of the received streams; and
- a first multiplier unit (306) which multiplies the residual signal by gain values so as to remove bits from the residual signal for areas which have little detail.

16. A method for providing spatial scalable compression using adaptive content filtering of a video stream, the method comprising the steps of:

- downsampling the video stream to reduce the resolution of the video stream;
- encoding the downsampled video stream to produce a base stream;
- decoding and upconverting the base stream to produce a reconstructed video stream;
- subtracting the reconstructed video stream from the video stream to produce a residual stream;
- attenuating the residual stream using a dead zone operation to remove bits from the residual stream; and
- encoding the resulting residual stream and outputting an enhancement stream.

17. The method for providing spatial scalable compression using adaptive content filtering of a video stream according to claim 16, the method further comprising the steps of:

- analyzing the video stream and the reconstructed video stream to produce gain values of the content of each pixel in the frames of the received video streams; and

multiplying the residual stream by gain values so as to remove bits from the residual stream prior to the dead zone operation.

18. The method for providing spatial scalable compression using adaptive content filtering of a video stream according to claim 16, the method further comprising the step of:

- removing residual pixels belonging to a pixel cluster for clusters below a predetermined size from the residual output.